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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,102	07/22/2003	Pedro M. Buarque De Macedo	50699/11	8891

1912 7590 06/02/2010

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ART UNIT	PAPER NUMBER
3637	

MAIL DATE	DELIVERY MODE
06/02/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/625,102
Filing Date: July 22, 2003
Appellant(s): BUARQUE DE MACEDO, PEDRO M.

Charles R. Macedo
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 01, 2010 appealing from the Office action mailed March 04, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

U.S. Patent Application 11/607,412.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59, and 63-66.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

4,324,037	**Grady, II**	**4-1982**
3,430,397	**Ellis**	**3-1969**
3,292,316	**Zeinetz**	**12-1966**
4,124,365	**Williams et al.**	**11-1978**
3,056,184	**Blaha**	**10-1962**
3,459,565	**Jones et al.**	**8-1969**
3,592,619	**Elmer et al.**	**7-1971**
2,758,937	**Ford**	**8-1956**

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 5, 13, 14, 23, 27, 29-31, 37, 42-47, 51-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grady, II (U.S. Patent No. 4,324,037) in view of Zeinetz (U.S. Patent No. 3,292,316) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).

Grady, II discloses, Figs. 7 and 8, an arrangement, (column), of tile units 82 held together as by tension bolts 90. At least one tile is placed between at least two metal beams 84 and held in compression by the tension bolts 90. Grady, II does not present the tiles 82 as made of a foamed glass.

However, Zeinetz teaches utilization of foamed glass tiles or blocks within a tensioned structural arrangement, col. 3, line 73 to col. 4, line 4. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teach utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi with each of Williams et al. and Blaha disclosing use of

the foam glass as a structural member sufficiently strong for structural purposes within the building industry, col. 1, lines 19-22 of Williams et al. and col. 1, lines 10-28 of Blaha.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

Therefore, to have provided the structural column of Grady, II with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by Zeinetz when considering either of Williams et al. and Blaha and further considering any of Jones et al., Elmer et al., and Ford, (**claims 1, 5, 14, 23, 27, 29, 31, 42-47, 51, 53-59, 63, and 65**). Applying a pre-compressive force of from 1,000 to 5,000 psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, (**claims 1, 5, 13, 23, 27, 42-47, 52, 54-59, and 63**).

As to **claims 13, 23 and 37**, to have placed the tension bolts 90 under a tension so as to prestress the foamed glass tile units of the resulting Grady, II assembly, thus forming a more strengthened arrangement, would have been obvious to one having ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 23, 27 54-59, and 63**, the resulting Grady, II assembly discloses a prestressed assembly for use in buildings or other structures comprising: at least one prestressed foam glass tiles, having a prestressed compression of 1000 to 10,000 psi or greater; at least two metal beams 84; and one or more tension members 90, wherein said at least one foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by said one or more tension members.

As to **claims 14, 31, 53 and 65**, the resulting Grady, II assembly discloses a prestressed assembly having tension members comprised of tension bolts 90.

As to **claims 30 and 64**, to have formed the metal, force transmitting beams 84 of steel, thus realizing the advantages of such old and well known construction material, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

Claims 1, 5, 13, 14, 42-47, and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of Zeinetz (U.S. Patent No. 3,292,316) when considering either of Williams et al. (U.S. Patent No.

4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937).

Ellis discloses, Fig. 2, an arrangement, (column), of tile units 12 held together as by tension members 30 or 26/28/30. At least one tile is placed and held in compression by the tension bolts 30 or 26/28/30. Ellis does not present the tile units 12 as made of a foamed glass.

However, Zeinetz teaches utilization of foamed glass tiles or blocks within a tensioned structural arrangement, col. 3, line 73 to col. 4, line 4. Fig. 11 of Zeinetz, for example, shows tension bolts 36, 39 holding foamed glass tiles, col. 4, lines 5-9, in place.

And, each of Williams et al., as at col. 1, lines 35-43, and Blaha, as at col. 3, lines 24-35, teaches utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi.

Further, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing various density including a density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller, col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6 of Jones et al., col. 3, lines 20-29 and lines 65-67 of Elmer et al., and col. 1, lines 45-49 and lines 63-70 of Ford.

Therefore, to have provided the structural column of Ellis with foamed glass tile units possessing a compressive strength of from 1,000 to 10,000 psi and a pore size of less than 1.0mm including a pore size of from 0.3mm to 0.7mm, in place of the clay or cement units, thus realizing the advantages of such foamed glass units within a structural arrangement, (including for example insulation properties), would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by Zeinetz when considering either of Williams et al. and Blaha and further considering any of Jones et al., Elmer et al., and Ford, (**claims 1, 5, 13, 14, 42-47, and 51-53**). Applying a pre-compressive force of from 1,000 to 5,000 psi to the resulting assembled foam glass units, thus affording as much recovery from the effects of a greater degree of overload, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made, (**claims 1, 5, 13, 14, 42-47, and 51-53**).

As to **claims 13 and 52** to have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made with Grady, II showing the tension members outside of the foam glass tile units.

As to **claims 14 and 53**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

Claims 23, 27, 29-31, 37, 54-59 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis (U.S. Patent No. 3,430,397) in view of Zeinetz (U.S. Patent No. 3,292,316) when considering either of Williams et al. (U.S. Patent No. 4,124,365) or Blaha (U.S. Patent No. 3,056,184) and further considering any of Jones et al. (U.S. Patent No. 3,459,565), Elmer et al. (U.S. Patent No. 3,592,619) and Ford (U.S. Patent No. 2,758,937) as applied to claims 1-5, 13, 14, and 42-53 above, and further in view of Grady, II.

As to **claims 23, 27, 29, 54-59, and 63**, the resulting Ellis assembly discloses a prestressed assembly for use in buildings or other structures comprising: a plurality of prestressed foam glass tiles, having a prestressed compression of 1000 to 5,000 psi or greater; a metal beam 18/20, at the top thereof, and one or more tension members 30, or 26/28/30, with the foam glass tiles are placed between said at least two metal beams and held in compression of at least 1,000 to 5,000 psi by the tension members. The resulting Ellis assembly does not disclose the tiles between two metal, force-transmitting beams.

However, Grady, II teaches applying metal force transmitting beams on either end of a structural arrangement so as to better distribute forces when tension is applied to the respective tension members 90.

Therefore, to have provided the resulting Ellis assembly with a second or lower metal force transmitting beam to cooperate with the upper force transmitting beam, thus effecting a more uniform distribution of forces when tension is applied to the respective

tension members 30, or 26/28/30, would have been obvious to one having ordinary skill in the art at the time the invention was made as taught by Grady, II. To have placed the tension bolts 30, or 26/28/30, under a tension so as to prestress the foamed glass tile units of the resulting Ellis assembly, thus forming a more strengthened arrangement, would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 30 and 64**, to have formed the resulting upper and lower metal, force transmitting beams 18/20 of steel, thus realizing the advantages of such old and well known construction material, would have constituted a further obvious to one having ordinary skill in the art at the time the invention was made.

As to **claims 31 and 65**, Ellis discloses the tension members may comprise any suitable tension-applying device. Therefore, to have provided tension bolts in place of the straps shown by Ellis would have been a further obvious expedient to one having ordinary skill in the art at the time the invention was made.

As to **claims 37 and 66**, the resulting Ellis assembly discloses that the tension members are not within the foam glass tiles.

(10) Response to Argument

With regard to Appellant's argument that none of the prior art references relied upon by the Examiner, either individually or in combination, teaches or even suggests a prestressed foam glass tile having any amount of prestress compression, let alone the claimed range of prestress compression, "in considering the disclosure of a reference, it

is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

As for Appellant's remarks found on pages 18 and 19 of the brief, Zeinetz '316 teaches and suggests prestressing of foam glass tiles under any amount of prestress compression. The tension bars 36, 39 are indeed, placed in a prestressed condition by means of device 37/38. With respect to Appellant's arguments found within the first paragraph on page 19 of the brief, Zeinetz '316 may suggest a load-sustaining layer made of concrete but such is with respect to a panel as suggested in lines 5-8 of col. 4. In other words, when a moisture-insulating layer is utilized it may be combined with one of the structural panels recited within lines 5-8 of col. 4 which listing includes the use of foamed glass slabs. Zeinetz '316 does not disclose that only a concrete structural panel be utilized.

As for Appellant's arguments against the application of either of Williams et al. and Blaha, each of Williams et al. and Blaha disclose use of the foam glass as a structural member sufficiently strong for structural purposes within the building industry, col. 1, lines 19-22 of Williams et al. and col. 1, lines 10-28 of Blaha.

With regard to Appellant's arguments to "prestress compression of 4000 psi or greater", "Generally, it is not invention to change size or degree of thing or of any feature or function of machine or manufacture; there is no invention where change does not involve different concept, purposes, or objects, but amounts to doing same thing substantially the same way with better results." *Hobbs v. Wisconsin Power and Light*

Company et al. 115 USPQ 371 (CA 7 1957). Making something that is merely stronger or longer lasting than the prior art is not sort of innovation for which patent monopoly is granted. Or, mere change in material cannot give rise to patentable invention where properties of materials are already known and result obtained was one to be expected; similarly, mere substitution of one, even superior, material for another in existing product or structure is ordinarily deemed to be obvious. *Brunswick Corporation v. Champion Spark Plug Company* 216 USPQ 1 (CA 7 1982).

Further, the applied prior at does indeed, enable the claimed pretsress compression recited within the present claims. In the instant case, and with regard to a convincing line of reasoning sought in *Ex parte Clapp*, one having ordinary skill in the building construction industry would have found it obvious to employ a foam glass tile or block having a necessary high compression strength as by applying the teachings of the applied references to arrive at a foam glass unit having a pore size of 1mm or less, (extracted from teachings of Jones et al. '565 as at col. 5, lines 35-43, col. 7, line 51 and col. 8, lines 5-6; Elmer et al. '619 as at col. 3, lines 20-29 and lines 65-67; and Ford '937 as at col. 1, lines 45-49 and lines 63-70), while providing for a block possessing a compression strength of 10,000 pounds per square foot, (extracted from at least the teachings of Williams et al. '365 which recognizes foam glass as an appropriate substitute for building construction tiles and blocks necessarily possessing a compression strength of at least 5,000 to 8,000 psi, [see Williams et al. at col. 1 lines 35-43 and lines 19-22], as well as from each of Jones et al. '565, Elmer et al. '619 and Ford '937 which recognizes the relationship between foam glass pore size and density

or compression strength, [see Jones et al. at col. 5, lines 35-43 or Elmer at col. 3, lines 65-67 or Ford at col. 1, lines 45-49 and lines 63-70]. Thus, those having ordinary skill in the building construction industry when considering all the applied references before them would have found it obvious to combine the principles and teachings of any of Jones et al. '565, Elmer et al. '619 and Ford '937 with either of Williams et al. '365 and Blaha '184 to produce a high strength foam glass building module that is to be assembled in a prestressed, (as by precompression), fashion, as is taught by Zeinetz '316, while utilizing the particular construction assembly of either of Grady, II '037 or Ellis '397 in order to arrive at the instantly claimed invention.

As for Appellant's argument that Zeinetz '316 does not teach prestressing of a foam glass tile under a prestress compression of 4,000 psi or greater, Zeinetz '316 has been utilized to teach and suggest prestressing of foam glass tiles under any amount of prestress compression. The instant rejections set forth as evidence a showing of prestressing per se of foam glass structural units. Reference to either of Williams et al. '365 and Blaha '184 teaches utilization of foamed glass tiles or blocks possessing a compressive strength in excess of 1200 psi with Williams et al. teaching a compressive strength on the order of 5,000 to 8,000 psi with either of Williams et al. and Blaha disclosing use of the foam glass as a structural member sufficiently strong for structural purposes within the building industry. From this, one of ordinary skill in the art would realize that foam glass block can be used for sufficiently strong for structural purposes within the building industry. Reference to each of Jones et al., Elmer et al., and Ford teaches manufacture of foam glass components possessing various density including a

density of from 20 to 60 pounds per cubic foot, with a pore size of less than 1mm including a pore size of from 0.1mm to 0.8mm or smaller. As such, each of Jones et al., Elmer et al., and Ford disclose manufacture of foam glass components possessing the same density and pore size disclosed within the instant application. Therefore, one of ordinary skill in the art would reason that one can **1)** manufacture a foam glass block having the necessary properties to be utilized within a sufficiently strong structure within the building industry and **2)** apply a sufficient amount of prestress to the foam glass block or assemblage of foam glass blocks as deemed appropriate or necessary to establish a sufficiently strong structure within the building industry. Either of Grady, II '037 and Ellis '397 discloses as old and well known the feature of building modules placed in a prestressed assembly possessing the particularly claimed arrangement of building modules, tension bolt and beam members. See Figs. 7 and 8 of Grady, II and Fig. 2 of Ellis.

With all the applied prior art considered, one having ordinary skill in the building construction art would have found it obvious to arrive at the claimed invention when taking all the teachings set forth in the applied prior art. Such attainment taking into consideration the general knowledge of one of ordinary skill in the art. Such analysis need not seek out precise teachings directed to specific subject matter of a challenged claim, since court can take account of inferences and creative steps that person of ordinary skill in art would employ, *KSR International Co. vs. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Fact that claimed combination of elements was "obvious to try" might show that such combination was obvious under 35 U.S.C. §103, since, if there is design

need or market pressure to solve problem, and there are finite number of identified, predictable solutions, person of ordinary skill in art has good reason to pursue known options within his or her technical grasp, and if this leads to anticipated success, it is likely product of ordinary skill and common sense, not innovation, *KSR International Co. vs. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007).

As for Appellant's argument that "the Examiner failed to articulate a finding as to how a person of ordinary skill in the art could have pursued, with a reasonable expectation of success, the allegedly known potential solutions disclosed in the prior art to obtain the claimed foam glass tile having a prestress compression of 4,000 psi or greater", the examiner has set forth such an articulated reasoning with the necessary rational underpinning to support the instant rejection. See for example, the above rejections as well as the examiner's arguments following the rejections. Thus, the examiner does explain the specific recognition or technological principle within the knowledge of one of ordinary skill in the art that would motivate one with no knowledge of the present invention to make the combination of the prior art to obtain the invention defined by the instantly rejected claims.

With regard to Applicant's arguments found on page 36 and 39-40 of the brief, in *In re Swinehart*, 439 F.2d 210, 212, 169 USPQ 226, 228 (CCPA 1971), it is stated that:

> [I]t is elementary that the mere recitation of a newly discovered function or property, inherently possessed by things in the prior art, does not cause a claim drawn to those things to distinguish over the prior art. Additionally, where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require

the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

Thus, Appellant's remark that "none of the prior art references relied upon by the Examiner, either individually or in combination, teaches or even suggests that foam glass tiles made with small pore sizes in an appropriate manner can also have the prestress strengths claimed by the rejected claims" is not convincing.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Michael Safavi/
Primary Examiner, Art Unit 3637

Conferees:

Darnell Jayne /dj/

Lanna Mai /lm/

M. Safavi
May 24, 2010